Animal Authentication: GUD Comments For APHIS
Global Uni-Docs Corp., Dallas, TX

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To: U.S. Department of Agriculture
Animal and Plant Health Inspection Service
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Inre: National Animal Identification System
Privatization of Animal Movement Tracking Database
Public comments

Dear Madams and Sirs,

Animal identification and tracking which does not authenticate the people and events behind production of livestock is only a partial solution and therefore subject to risk.

The goal of any identification or track-and-trace program is to increase transparency, safety and confidence in livestock products. Initially, the goals are to identify the animal and its source uniquely, and to track its movements. Over time, a wide range of information may be gathered to derive competitive advantage or streamline regulatory compliance, including birth date, pedigree, growth records, original owner, ownership transfers, veterinary reports, vaccinations, feed regimes, feedlot number, etc.

Standard proposals center around the idea of storing key information in either a single central database or a set of disparate centralized databases. The balance of data would be retained in other databases that reside with the owner(s) of the animal as they move through production. This approach, which has been tried extensively in other industries, is inherently vulnerable to a number of key problems including

1. ***High Administrative Overhead***. Keeping track of who has what level of permission to access, enter, delete or update information is a very significant problem when the database covers an entire industry. Particularly one with as many players as the livestock industry.
2. ***Privacy Concerns***. Who can read which information? What guarantees can be made that it will not be used for illicit commercial advantage?
3. ***Information Fragmentation***. In practice, information tends to fragment into separate "information silos" each controlled by a different governmental, commercial or trade association player. No one has a complete record of a particular product. And tracing back health or other problems becomes difficult and time-consuming.
4. ***Security Concerns***. A central industry database is a tempting target both for external hackers (motivated by either commercial gain or ideological opposition to meat) and for the more common and dangerous "insider threat" of an employee acting illegally to access or corrupt the database.
5. ***Inability to Authenticate Data***. It is not enough to retrieve information; one must also be able to prove that it is correct. This includes situations of regulatory compliance, liability mitigation and risk reduction, and commercial applications such as age and source verifying livestock to meet export requirements. Authenticating database information is notoriously difficult, because of the ease with which data can be altered, entered after the fact, or presented out of context.

Global Uni-Docs (GUD) recommends consideration of a novel solution centered on authenticated product history documents, rather than databases. Instead of entering fragments of information into database(s), each livestock or meat product corresponds to a secure, electronic product history document. Each secure document may then be archived in a server with the information kept in the context it was originally delivered.

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Each product history document contains a chronological account of the key events affecting a particular animal or product. When the product changes hands, so does permission to add to the product history document. The product history document contains embedded procedures for controlling who can enter, or later read, particular parts of the record. The owner of the animal controls access to the document, not the owner of the database.

The product history document solution has many advantages over a conventional database approach, including

1. ***Low Administrative Overhead***. A product history document is created locally when a new animal is born. There is no need to maintain an industry-wide directory of who can enter/access what information. Instead, the records may be provided on an as-need basis and archived with permission controls limiting access.
2. ***Privacy Protection***. The owner of the data controls who can access it later, not the organization receiving information and putting it into a database. This helps to ensure that information is only used for legitimate purposes.
3. ***Information Integration***. All relevant and/or required information concerning a particular animal, throughout its life-cycle, is inherently integrated into a single document. There is no need to expensively track information back through separate databases owned by different organizations.
4. ***Strong Security***. If a database is hacked, all of the information in it may be stolen or altered. By contrast, each product history document is individually capable of defending itself from illegal access. Therefore, the product history document solution is not vulnerable to the massive security collapses that plague database systems. Further, if a back-end database fails due to Force Majeure or otherwise, the ability to authenticate a document is not lost.
5. ***Strong Authentication***. Product information is entered permanently into a secure document, and the person entering the information can be authenticated by a variety of means. This helps to ensure that a correct product history was entered and was not tampered with after the fact.

The product history document solution is fully compatible with existing identification and track-and-trace systems. Information from track-and-trace systems can be entered into a product history document, and product history information can be downloaded to a database when necessary. Product history documents can “sit on top” of conventional systems, leaving them in-place while adding the critical new benefits described above.

We suggest that the industry strongly consider authentication solutions now as they consider, test, and pilot processes to identify and track livestock. Otherwise a significant amount of time and money will be spent to provide what will at best be an expensive, difficult to maintain partial solution.

Best regards

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